

REMARKS

The application has been amended and is believed to be in condition for allowance.

Previously, responsive to the requirement for restriction, applicants elected Group I, claims 1-10, 20 and 21, drawn to a semiconductor device, without traverse. Accordingly, claims 1-10 and 20-21 were examined.

Claim 1 is amended responsive to the claim objection.

There are no other formal matters outstanding.

Claims 1, 3, 5, 7, 9 and 20 were rejected as anticipated by AWANO 2002/0163079.

Claims 2, 4, 6, 8, 10 and 21 were rejected as anticipated by HAASE 2003/0211724.

The claims have been amended to patentably recite the invention. New claims are added and find support in the specification as originally filed and as illustrated by especially Figures 3, 5, and 7.

The claimed invention is both novel and non-obvious.

The prior art does not teach or suggest a via hole filled with a metal and comprising a nanomaterial surrounded by the metal (claim 1).

The prior art does not teach or suggest a trench within a dielectric film, a metal layer filling on the trench, nanotubes formed on metal particles and mixed in the metal layer (claim 2).

The prior art does not teach or suggest the combination of claim 27. In particular, the prior art does not teach or suggest a trench within a dielectric film that includes an interconnection comprising a metal layer filling the trench, a barrier metal layer located intermediate the metal layer and the dielectric film, and carbon nanotubes formed on the metal particles and mixed in the metal layer.

Nor does the prior art teach or suggest the further features of a first etching stopper layer covering the dielectric film, wherein, each of i) the trench, ii) the interconnection, iii) the metal layer, iv) the barrier metal layer (13), and the nanotubes extend through the first etching stopper layer (claim 28).

Still further, the prior art does not teach a via hole formed in a second etching stopper layer, another dielectric film, and a third etching stopper layer, where metal fills the via hole and further carbon nanotubes are formed on mixed in the metal filling the via hole. The prior art does not teach or suggest that the metal filling the via hole, the further carbon nanotubes, and another barrier metal layer define a connection plug.

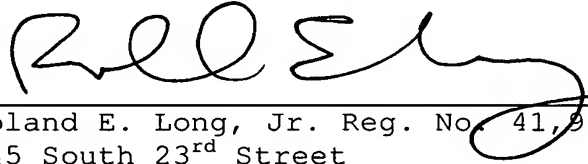
Reconsideration and allowance of all the claims are respectfully requested.

The Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any

overpayment to Deposit Account No. 25-0120 for any additional
fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17.

Respectfully submitted,

YOUNG & THOMPSON

A handwritten signature in black ink, appearing to read "REL", with a long horizontal flourish extending to the right.

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